Fastener Tightening Specifications

Application	Specification	
	Metric	English
Rear Drive Shaft to Rear Hub Retaining Nut		
There are two alternate methods of achieving the required Rear Hub Retaining Nut torque. **Important: DO NOT EXCEED THE SPECIFIED TIGHTENING VALUES, otherwise premature bearing failure may result.**		
Preferred Method		
First Pass	150 N·m	110 lb ft
Loosen	-180 Degrees	
Final Pass	425 N·m	313 lb ft
Alternate Method		
First Pass	150 N·m	110 lb ft
Loosen	-180 Degrees	
Second Pass	50 N·m	37 lb ft
Final Pass	45 Degrees	

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Adhesives, Fluids, Lubricants, and Sealers

Constant Velocity Joint	Lubricant-Inboard Wheel Drive shaft	Lubricant-Outboard Wheel Drive shaft
V8	NTN :NKG205 170 grams	NTN :NTG2218-M 160 grams
V6	NTN :NKG205 145 grams	NTN :NTG2218-M 125 grams

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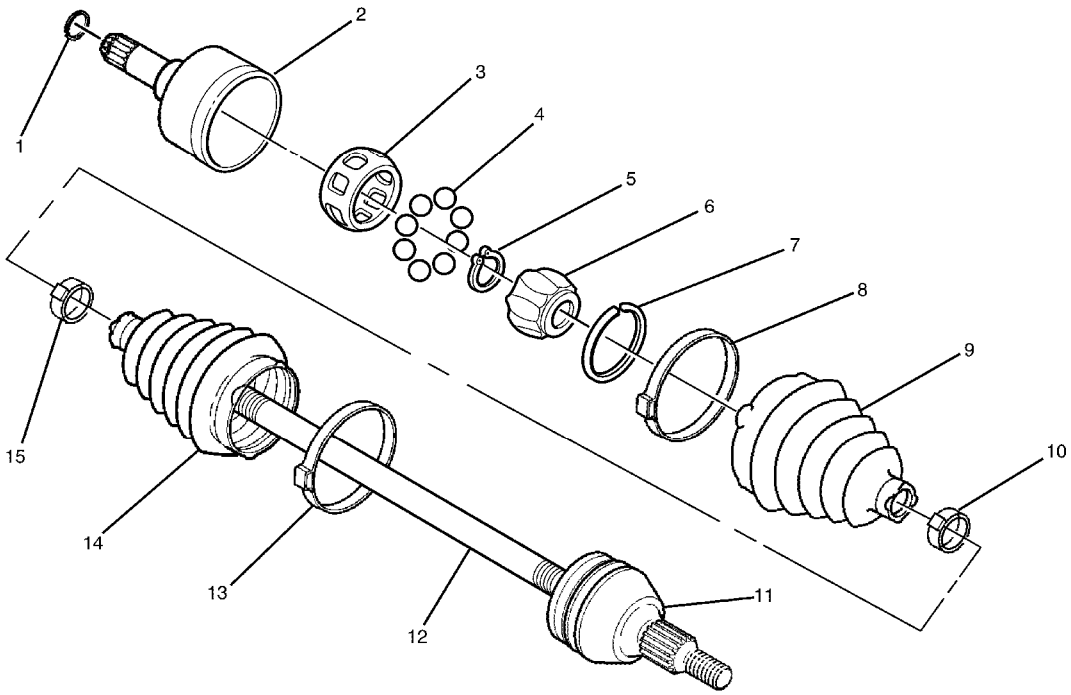
Wheel Drive Shafts Disassembled Views



(1) Snap Ring
(2) Inner Constant Velocity Joint Outer Race
(3) Inner Constant Velocity Joint Cage
(4) Inner Constant Velocity Balls
(5) Inner Race Circlip
(6) Inner Constant Velocity Joint Inner Race
(7) Inner Constant Velocity Joint Outer Race Circlip
(8) Inner Joint Boot Large Retaining Clamp
(9) Inner Joint Boot
(10) Inner Joint Boot Small Retaining Clamp
(11) Outer Constant Velocity Joint
(12) Interconnecting Shaft
(13) Outer Joint Boot Large Retaining Clamp
(14) Outer joint Boot
(15) Outer Joint Boot Small Retaining Clamp

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Wheel Drive Shaft Replacement

Tools Required

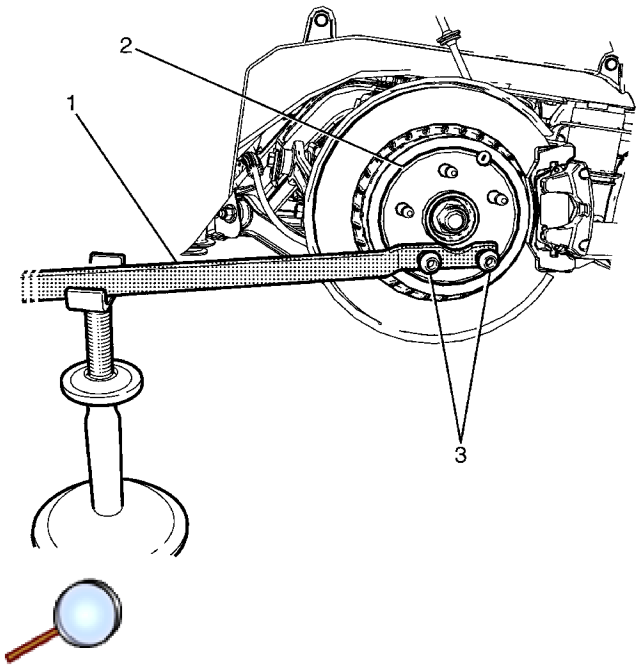
- KM-468 Holding Tool.
- J-22912-01 Press Plates.
- J 22610 Keystone Pliars.
- 7208 Rear Axle Remover.

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the rear tyre and wheel assemblies. Refer to Tire and Wheel Removal and Installation.



3. Install the KM-468 (1) to the wheel hub (2) with two inverted wheel nuts (3).
4. Support the KM-468 (1) outer end on a safety stand.

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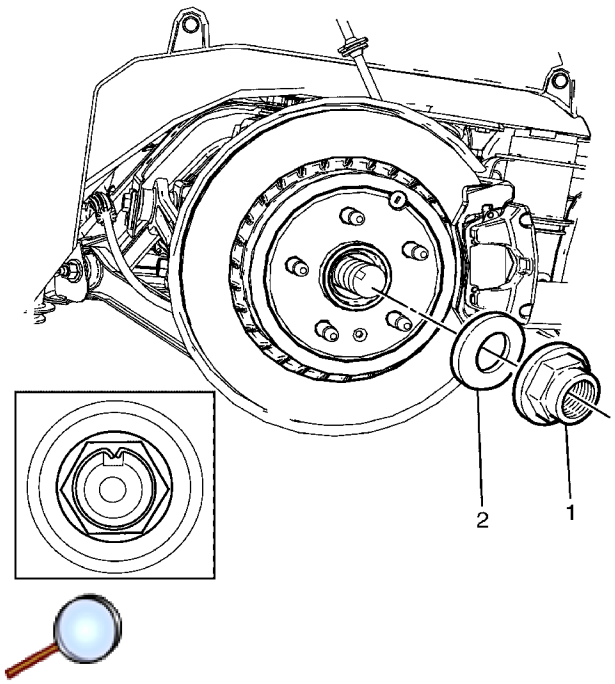


Important: Use a suitable tool to release the crimping on the wheel drive shaft retaining nut.

Important: The wheel drive shaft retaining nut (1) must be discarded after removal.

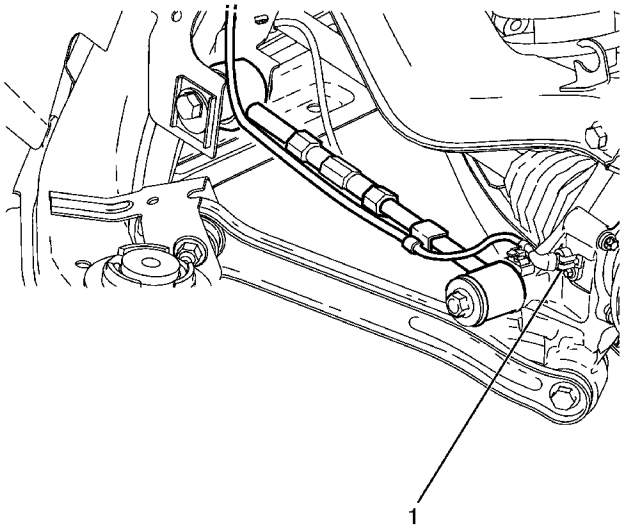
5. Remove the wheel drive shaft retaining nut (1).

   Discard the nut.

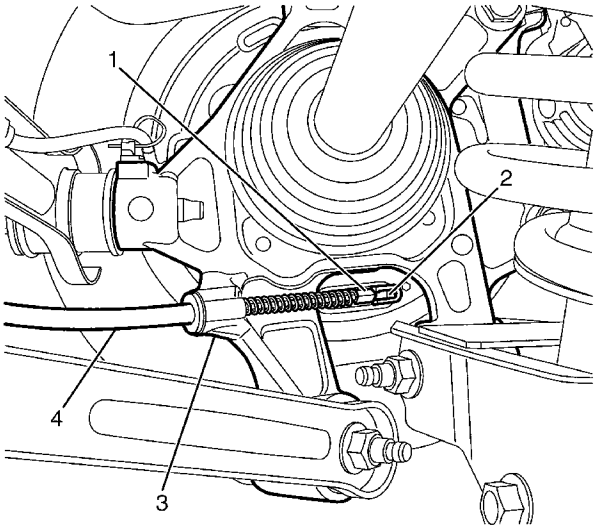
6. Remove the wheel drive shaft washer (2).

   Discard the washer.

7. Remove the KM-468 from the wheel hub.



8. Disconnect the wheel speed sensor electrical connector (1).
9. Detach the wheel speed sensor wiring harness mounting clip (2) from the knuckle (3).

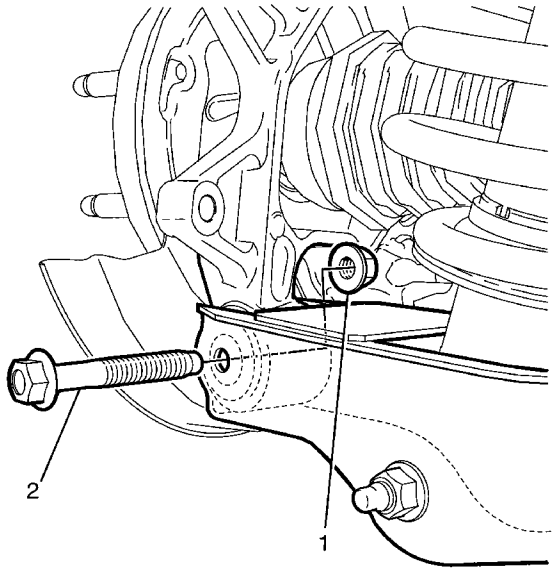


Important: Using a suitable tool, detach the rear park brake cable and clevis (1) from the park brake actuator (2) by pivoting the rear park brake cable and clevis (1) rearward.

10. Detach the rear park brake cable and clevis (1) from the park brake actuator (2).

Important: Remove the outer cable (4) from the rear knuckle (3) by pulling the outer cable (4) forward.

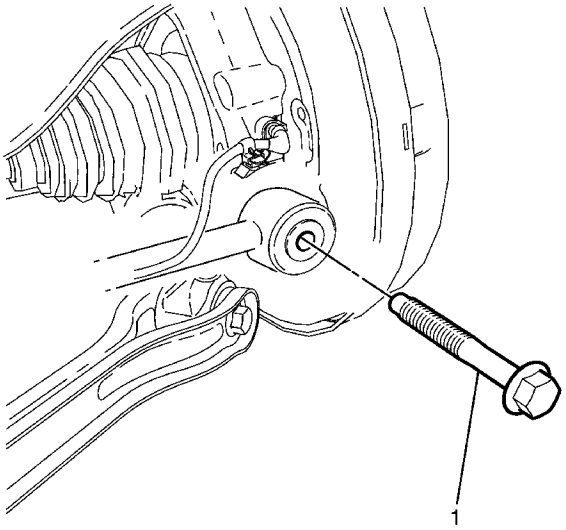
11. Remove the outer cable (4) from the rear knuckle (3).



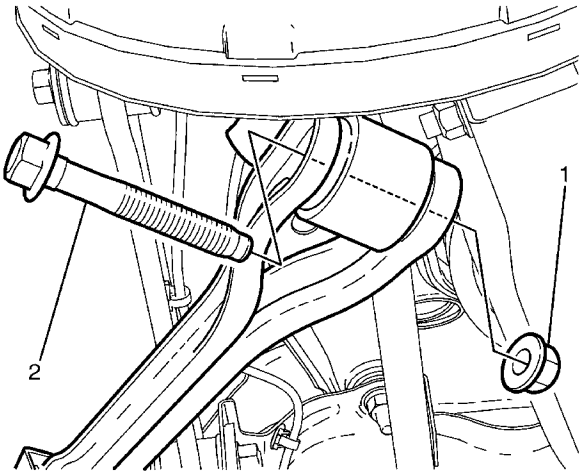
Important: Nuts with micro-encapsulated thread sealant must be discarded after removal.

12. Remove the lower control arm to knuckle retaining bolt (2) and nut (1).

    Discard the nut.

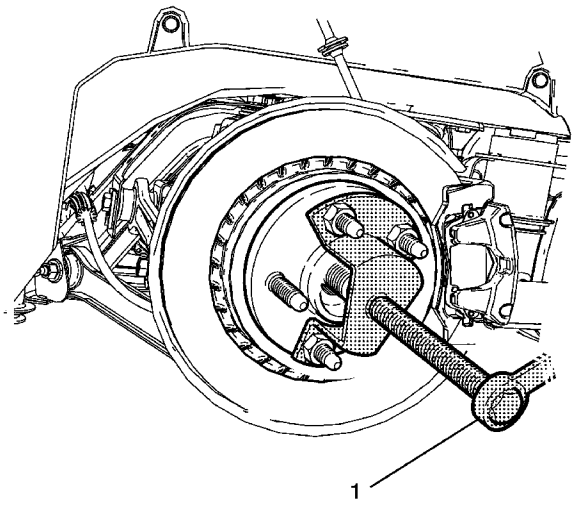


13. Remove the I-Link to knuckle retaining bolt (1) and washer (2).



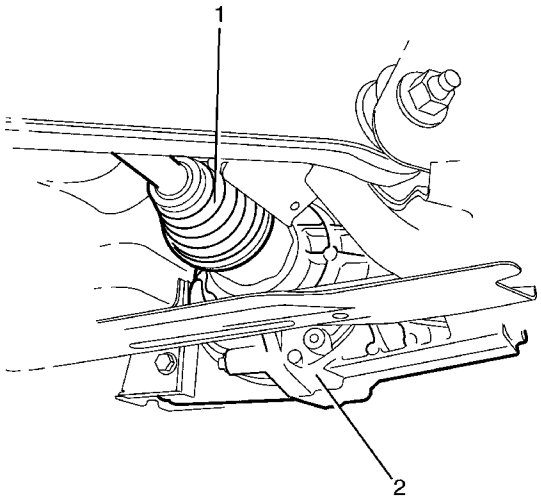
14. Remove the Y-Link to the knuckle retaining bolt (2) and nut (1).

Discard the nut.



Important: Do not hammer the end of the wheel drive shaft to remove use 7208 .

15. Use 7208 to remove the wheel drive shaft (1) from the wheel hub assembly (2).
16. Place a suitable container under the differential in order to collect draining fluid.



Important: Do not pull on the interconnecting shaft as it will pull apart the inboard joint.

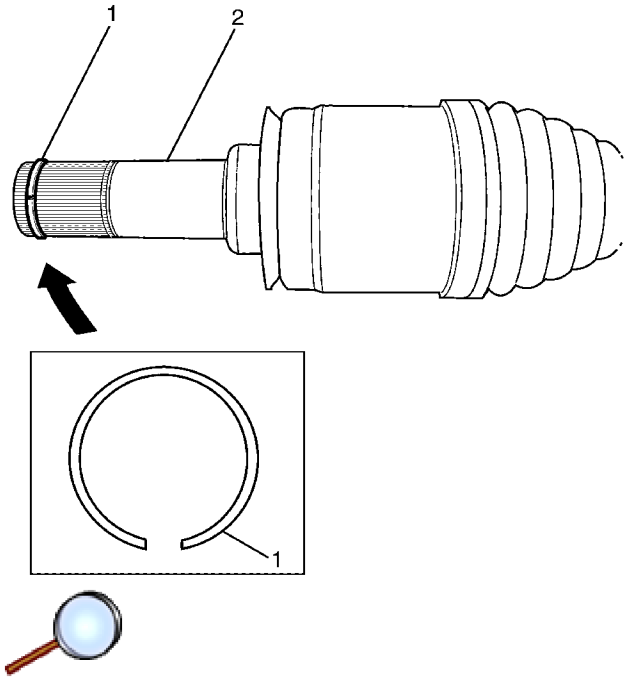
Important: Do not damage the axle seal when disconnecting the wheel drive shaft (1) from the differential (2). Cuts or abrasions will damage the axle seal and result in lubricant

leakage from this area.

Important: Use a suitable tool to pry the inner constant velocity joint out of the differential to release the snap ring.

Important: Support the wheel drive shaft when removing as the rear subframe may cut the inner constant velocity boot.

17. Disconnect the wheel drive shaft (1) from the differential (2).
18. Remove the wheel drive shaft (1) from the vehicle.



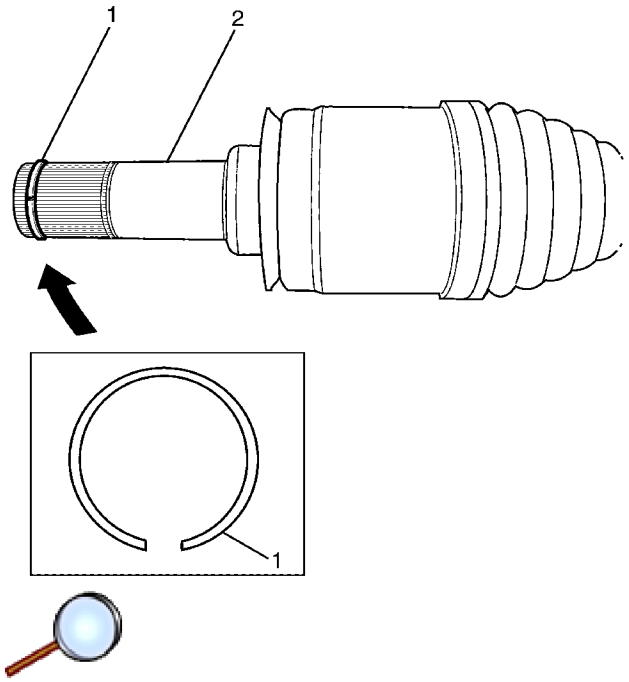
Important: The snap ring (1) is a single use part and must be discarded after removal.

19. Remove the snap ring (1) from the inner constant velocity joint (2).

    Discard the snap ring.

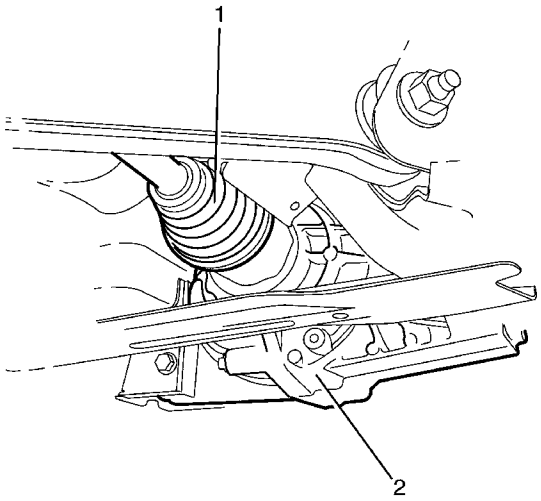
20. Inspect the wheel drive shaft assembly for excessive wear and/or damage. Inspect the following:
    - Wheel Drive Shaft.
    - Inner Joint Boot. For replacement refer to Rear Wheel Drive Shaft Inner Joint Boot Replacement.
    - Inner Constant Velocity Joint. For replacement refer to Wheel Drive Shaft Inner Joint and Boot Replacement.
    - Outer Joint Boot. For replacement refer to Rear Wheel Drive Shaft Outer Joint Boot Replacement.
    - Outer Constant Velocity Joint. For replacement refer to Wheel Drive Shaft Outer Joint and Boot Replacement.

Installation Procedure



Important: The gap in the snap ring (1) must be at the bottom.

1. Install the NEW snap ring (1) to the wheel drive inner constant velocity joint (2).



Important: Do not damage the axle seal when installing the wheel drive shaft (1) to the differential (2). Cuts or abrasions will damage the axle seal and result in subsequent lubricant leakage from this area.

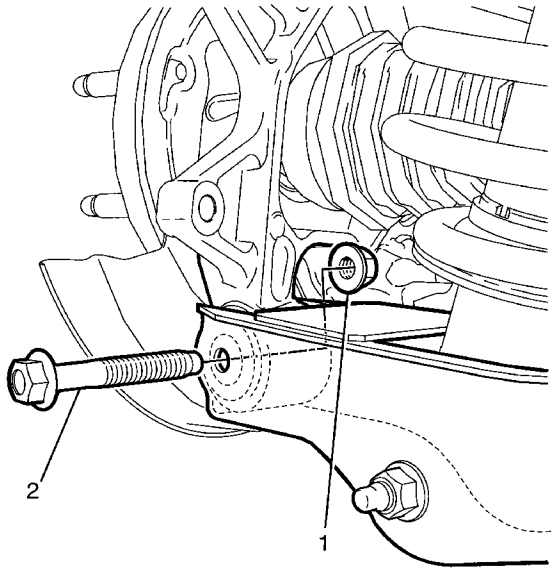
2. Install the wheel drive shaft (1) to the differential (2).

Important: Pull the wheel hub assembly outwards to position the wheel drive shaft through

the wheel hub assembly.

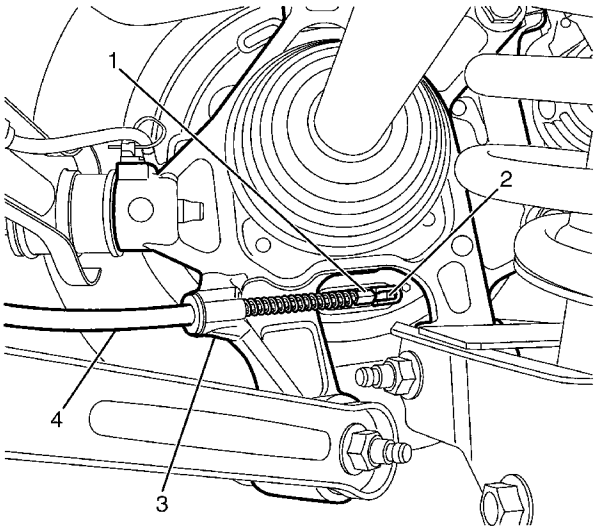
3. Position the wheel drive shaft through the wheel hub assembly.

Notice: Refer to Fastener Notice in the Preface section.



4. Install the lower control arm to knuckle retaining bolt (2) and NEW nut (1).

Tighten
Tighten the bolt and nut to 105 N·m (77 lb ft).

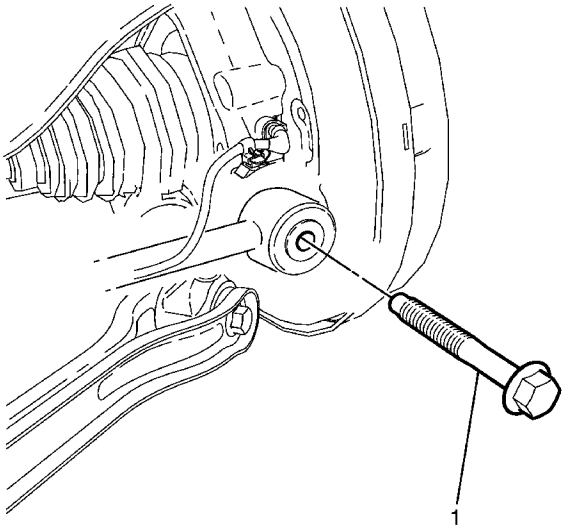


5. Install the rear park brake cable (4) into the rear knuckle (3).

   Make sure that the rear park brake cables (4) are properly seated.

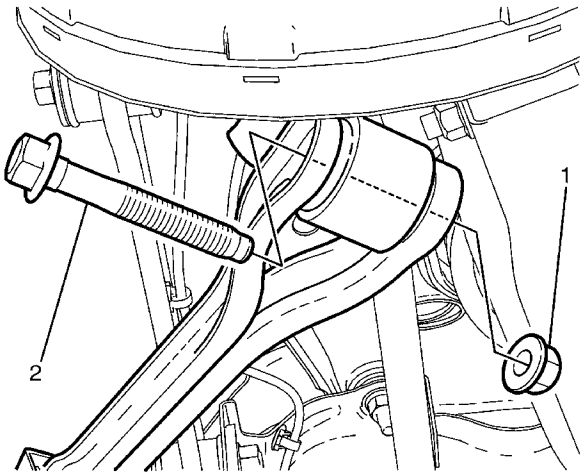
   Important: Attach the rear park brake cable and clevis (1) to the park brake actuator (2) by pivoting the rear park brake cable and clevis (1) rearward using pliers.

6. Attach the rear park brake cable and clevis (1) to the park brake actuator (2).



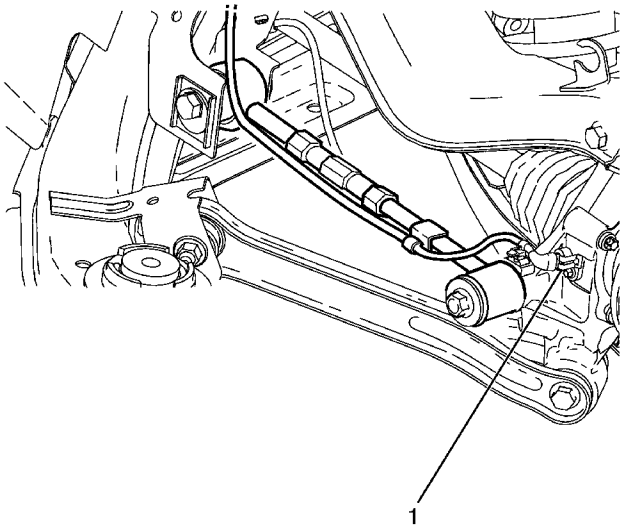
7. Install the I-Link to knuckle retaining bolt (1) and washer (2).

   Tighten
   Tighten the bolt to 105 N·m (77 lb ft).



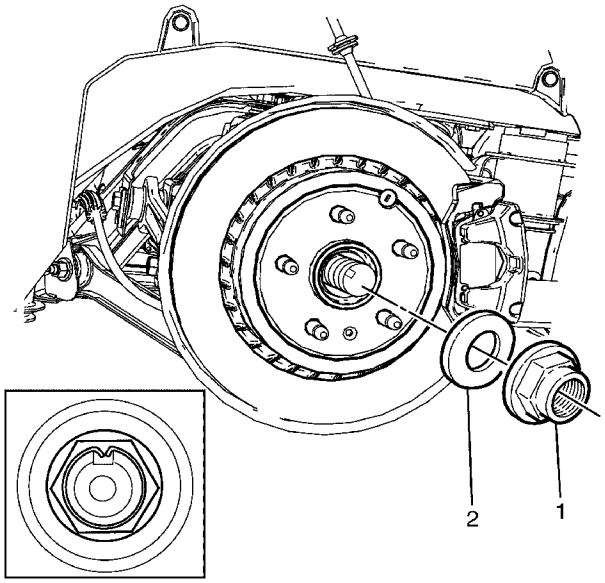
8. Install the Y-Link to the knuckle retaining bolt (2) and NEW nut (1).

Tighten
Tighten the bolt and nut to 170 N·m (126 lb ft).

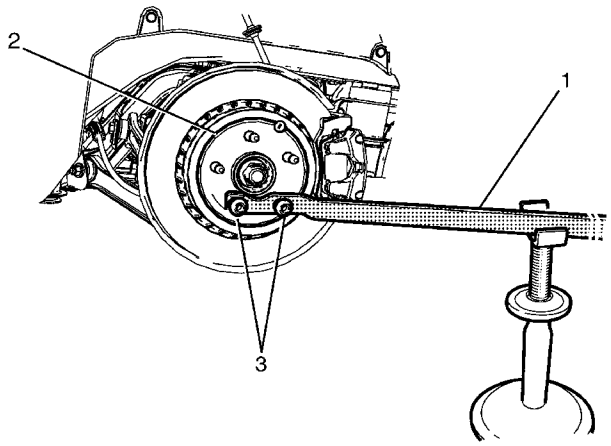


Important: The wheel speed sensor cable must be secured to protect it from damage.

9. Connect the wheel speed sensor electrical connector (1).



10. Install the NEW wheel drive shaft washer (2) to the wheel hub assembly.
11. Install the NEW wheel drive shaft nut (1) to the wheel hub assembly.



12. Install the KM-468 (1) to the wheel hub assembly (2) with two inverted wheel nuts (3).
13. Support the KM-468 (1) outer end on a safety stand.

Notice: Refer to Fastener Notice in the Preface section.

Important: There are two suitable methods of tightening the wheel drive shaft retaining nut. DO NOT EXCEED THE SPECIFIED TIGHTENING VALUES, otherwise premature bearing failure may result.

14. Preferred Method

Tighten
Tighten the nut on first pass to 150 N·m (111 lb ft).

Loosen
Loosen the nut on second pass by 180 Degrees.

Tighten
Tighten the nut on third pass to 425 N·m (313 lb ft)

Crimp nut.

Alternate Method

Tighten
Tighten the nut on first pass to 150 N·m (111 lb ft).

Loosen
Loosen the nut on second pass by 180 Degrees.

Tighten

Tighten the nut on the third pass to 50 N·m (37 lb ft)

Tighten
Tighten the nut on the forth pass by 45 Degrees

Crimp nut.

15. Remove the KM-468 (1).
16. Use a suitable tool to crimp the NEW wheel drive shaft nut to the wheel drive shaft keyway.
17. Install the rear wheel. Refer to Tire and Wheel Removal and Installation.
18. Check the differential fluid level. Refer to Rear Axle Lubricant Level Inspection.
19. Remove the safety stands.
20. Lower the vehicle to the ground.

Wheel Drive Shaft Inner Joint and Boot Replacement

Tools Required

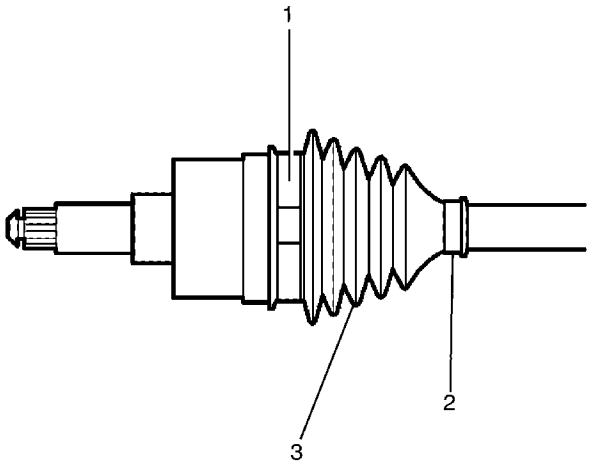
J 22610 Keystone Pliers.

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the wheel drive shaft from the vehicle. Refer to Wheel Drive Shaft Replacement .



Important: The inner joint boot small retaining clamp (2) and the inner joint boot large retaining clamp (1) are single use parts and must be discarded after use.

3. Remove the inner joint boot small retaining clamp (1) and the large retaining clamp (2) from the inner joint boot (3).

   Discard the clamps.

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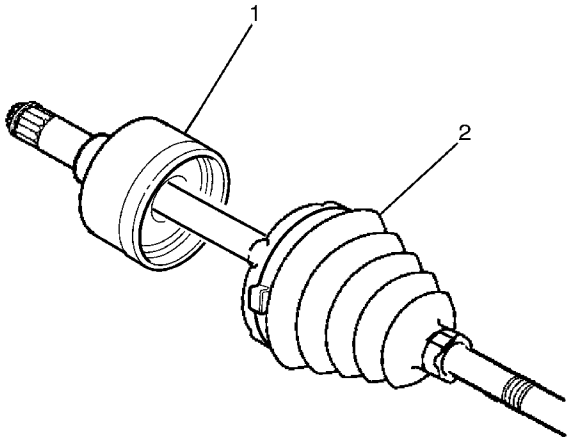
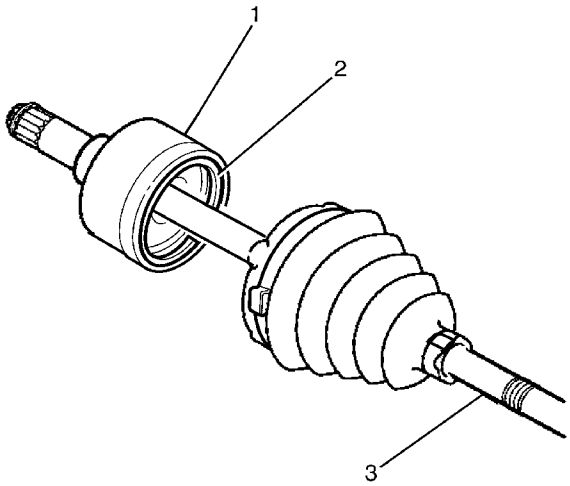


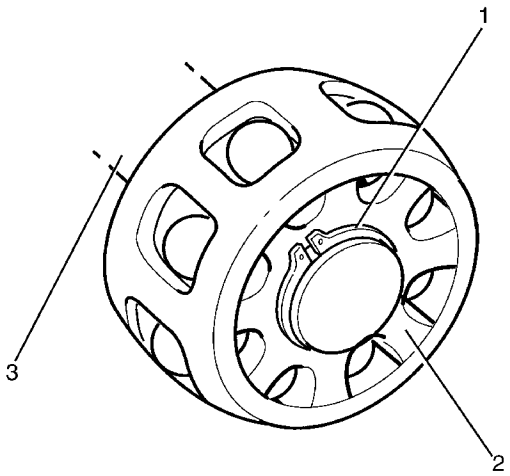
4. Move the inner joint boot (2) from the inner constant velocity joint (1) along the interconnecting shaft (3).



5. Remove the circlip (2) from the outer race of the inner constant velocity joint (1).

Important: Take care as inner constant velocity balls can fall out when the inner constant velocity joint outer race (1) is removed.

6. Remove the inner constant velocity joint outer race (1) from the interconnecting shaft (3).

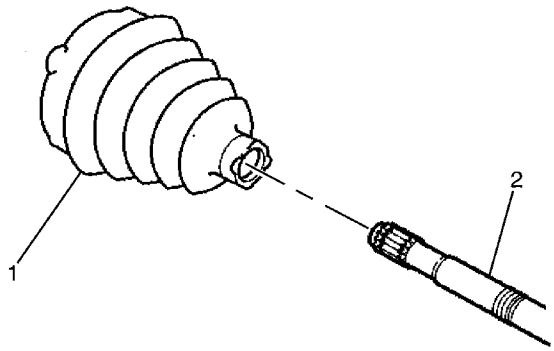


Important: The circlip (1) is a single use part and must be discarded after use.

7. Remove the circlip (1) from the inner constant velocity joint inner race (2).

   Discard the circlip.

8. Remove the inner constant velocity joint inner race (2) from the interconnecting shaft (3).

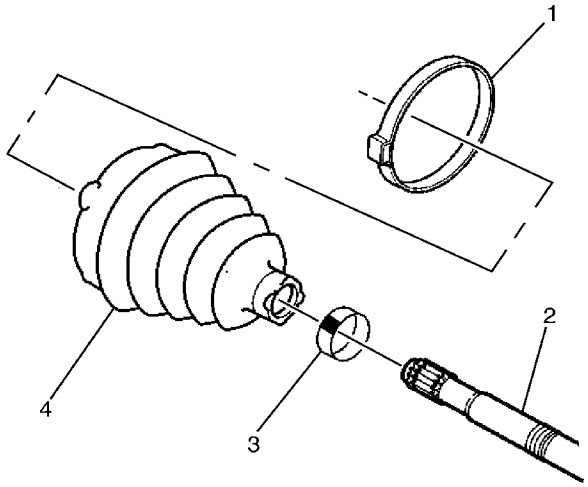


9. Remove the inner joint boot (1) from the interconnecting shaft (2).

   Important: All traces of old grease and any contaminates must be removed.

10. Clean the grease from the interconnecting shaft (2).

Installation Procedure

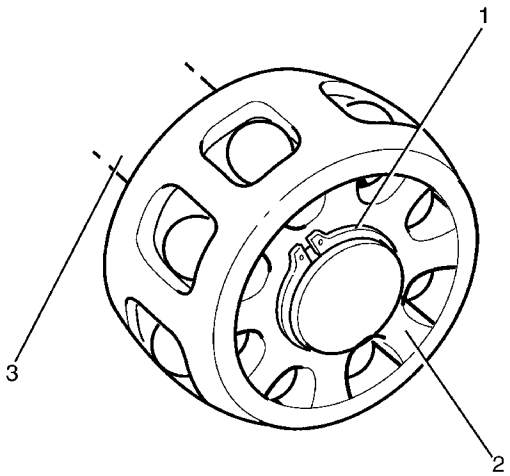


Important: The NEW inner joint boot large retaining clamp (1) and the NEW inner joint boot small retaining clamp (3) must not be fully tightened at this stage.

1. Install the NEW inner joint boot large retaining clamp (1) and the NEW inner joint boot small retaining clamp (3) to the NEW inner joint boot (4).

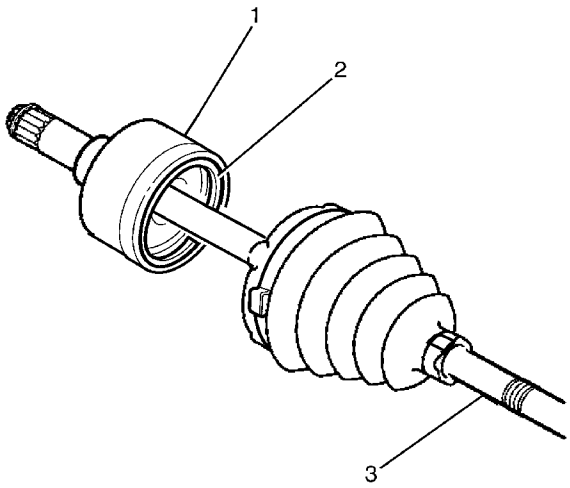
   Do not fully tighten clamps.

2. Install the NEW inner joint boot (4) along the interconnecting shaft (2).

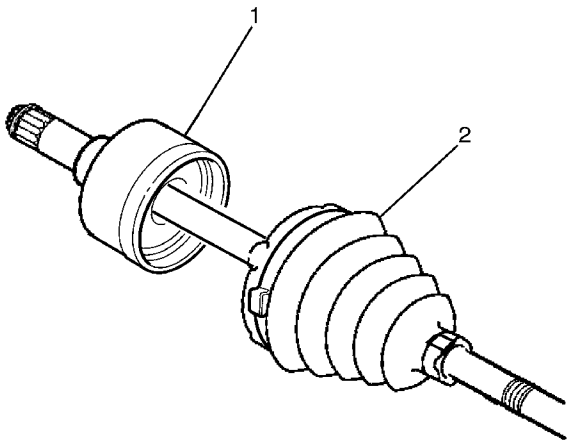


Important: Pack grease around the inner constant velocity balls to aid in holding in place. Refer to Adhesives, Fluids, Lubricants, and Sealers .

3. Install the inner race (2) to the interconnecting shaft (3).
4. Install the NEW inner race snap ring (1) to the interconnecting shaft (3).

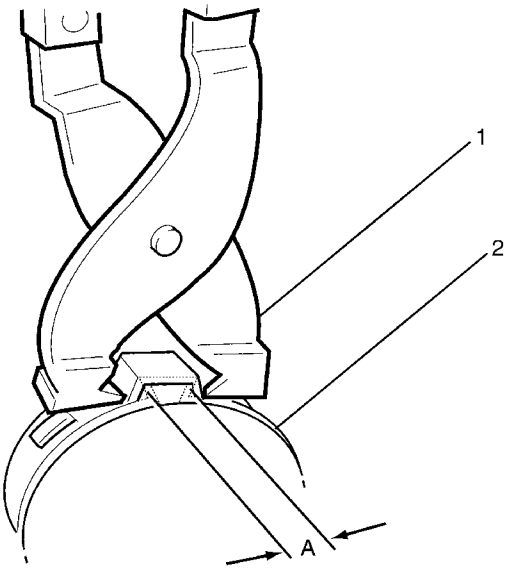


5. Install the inner constant velocity joint outer race (1) to the interconnecting shaft (3).
6. Install the NEW inner constant velocity joint outer race circlip (2) to the outer race of the inner constant velocity joint (1).



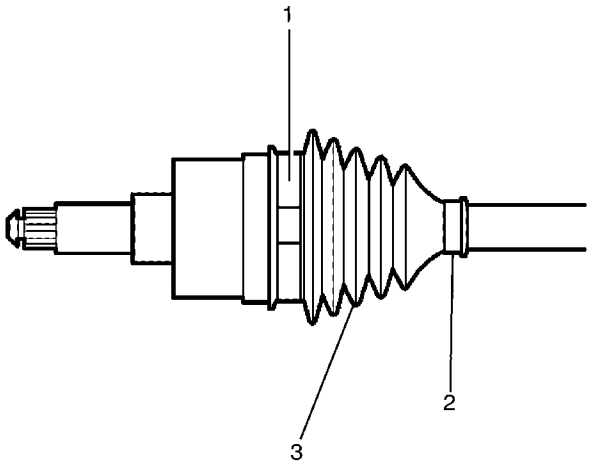
Important: Install grease into the inner constant velocity joint (1) and the NEW inner joint boot (2). Refer to Adhesives, Fluids, Lubricants, and Sealers .

7. Install the NEW inner joint boot (2) to the constant velocity joint (1).

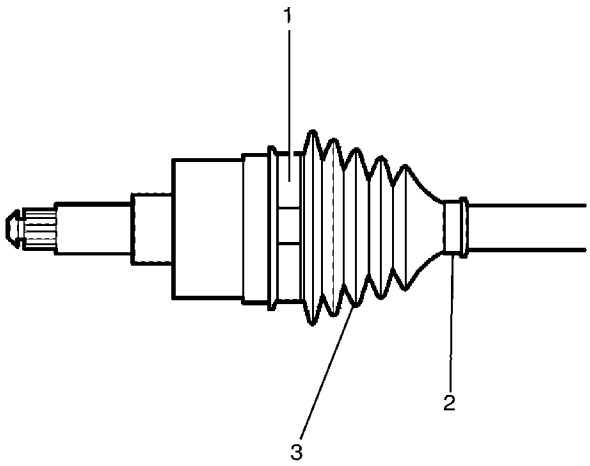


8. Use J 22610 (1) to crimp retaining clamp (2). The crimped distance (A) must be between 1.2 - 4mm.

Notice: Refer to Fastener Notice in the Preface section.

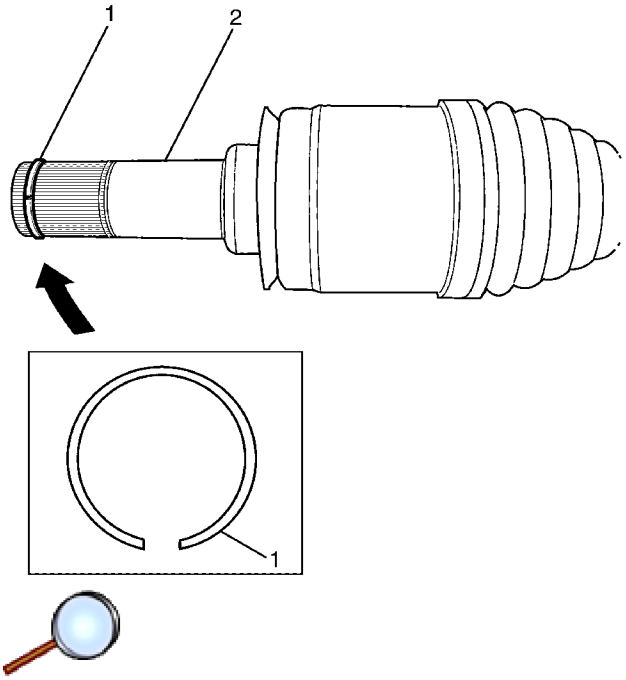


9. Crimp the NEW inner joint boot large retaining clamp (1) and NEW inner joint boot small retaining clamp (2) to the NEW inner joint boot (3).



Important: The NEW inner joint boot (1) must not be dimpled, stretched, or deformed. Always equalise the air pressure in the NEW inner boot with the joint in the centre of its plunge position and shape correctly by hand.

10. The inner constant velocity joint dimension A is 280.3 mm (11.04 in) for V8 and 281.8 mm (11.09 in) for V6.



11. Install the NEW snap ring (1) to the inner constant velocity joint (2).
12. Fully cycle the inner constant velocity joint (2) several times to disperse grease throughout the inner constant velocity joint (2).
13. Install the wheel drive shaft to the vehicle. Refer to Wheel Drive Shaft Replacement .
14. Remove the safety stands.
15. Lower the vehicle to the ground.

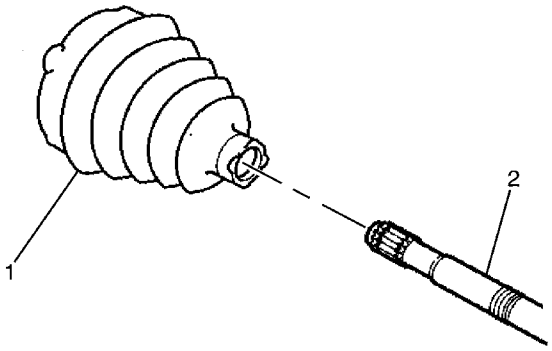
Rear Wheel Drive Shaft Inner Joint Boot Replacement

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the wheel drive shaft from the vehicle. Refer to Wheel Drive Shaft Replacement.
3. Remove the inner constant velocity joint. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement.



4. Remove the inner joint boot (1) from the interconnecting shaft (2).

   Discard the inner joint boot.

   Important: All traces of old grease and any contaminates must be removed.

5. Clean the grease from the interconnecting shaft (2).

Installation Procedure

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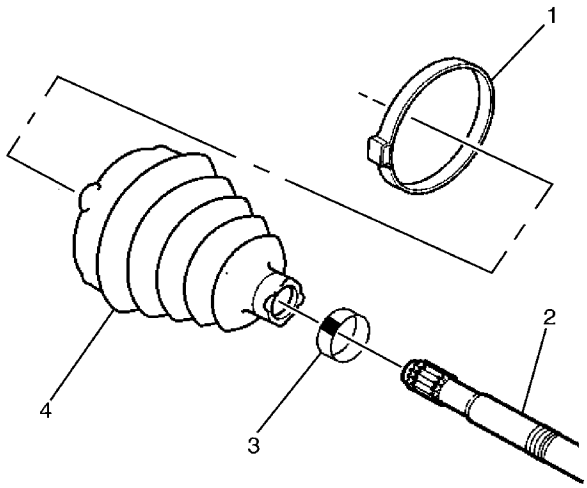

Important: The inner constant velocity joint NEW small retaining clamp (3) and NEW large retaining clamp (1) must not be fully tightened at this stage.

1. Install the NEW large retaining clamp (1) and the NEW small retaining clamp (3) to the NEW inner joint boot (4).

   Do not fully tighten clamp.

2. Install the NEW inner joint boot (4) along the interconnecting shaft (2).
3. Install the inner constant velocity joint. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement.
4. Install the wheel drive shaft to the vehicle. Refer to Wheel Drive Shaft Replacement.
5. Remove the safety stands.
6. Lower the vehicle to the ground.

Wheel Drive Shaft Outer Joint and Boot Replacement

Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

Important: Outer constant velocity joint and axle shaft can not be separated and are replaced as a complete assembly.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle.
2. Remove the wheel drive shaft from the vehicle. Refer to Wheel Drive Shaft Replacement.
3. Remove inner constant velocity joint and joint boot. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement.
4. Discard wheel drive shaft assembly.

Installation Procedure

1. Install outer joint boot to NEW outer constant velocity joint and axle shaft assembly. Refer to Rear Wheel Drive Shaft Outer Joint Boot Replacement.
2. Install the inner constant velocity joint and joint boot. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement.
3. Install the wheel drive shaft to the vehicle. Refer to Wheel Drive Shaft Replacement.
4. Remove the safety stands.
5. Lower the vehicle to the ground.

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Rear Wheel Drive Shaft Outer Joint Boot Replacement

Tool Required

J 22610 Keystone Pliers.

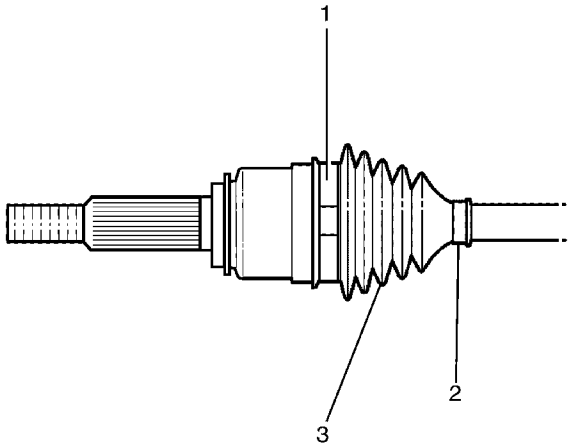
Removal Procedure

Caution: Refer to Safety Glasses Caution in the Preface section.

Caution: Refer to Vehicle Lifting Caution in the Preface section.

Important: When the outer joint boot is replaced the inner joint boot must always be replaced.

1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
2. Remove the wheel drive shaft from the vehicle. Refer to Wheel Drive Shaft Replacement .
3. Remove inner constant velocity joint and joint boot. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement .



Important: The outer joint boot small retaining clamp (2) and outer joint boot large retaining clamp (1) are single use parts and must be discarded after use.

4. Remove the outer joint boot large retaining clamp (1) and the outer joint boot small retaining clamp (2) from the outer joint boot (3).

   Discard the clamps.

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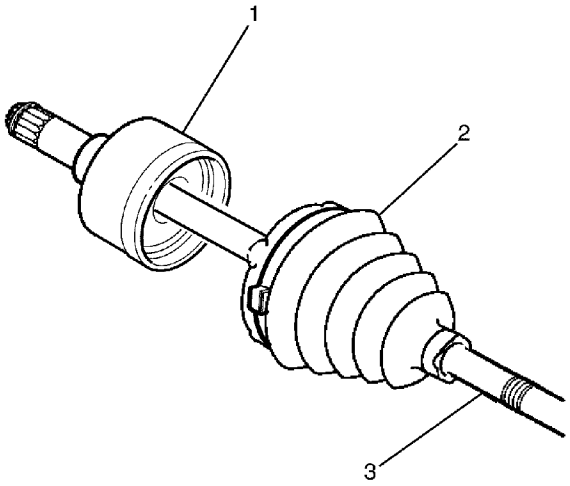


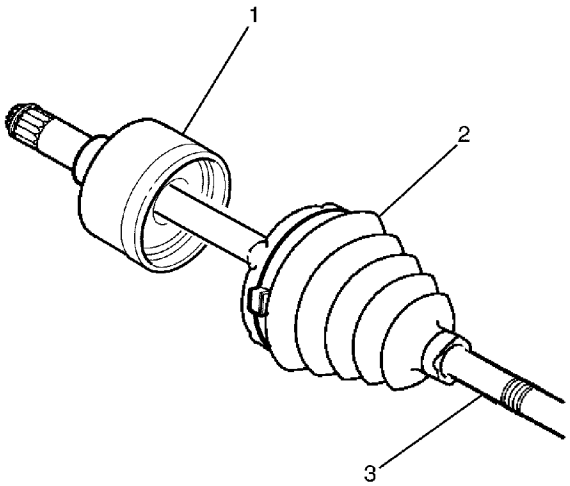
5. Remove the outer joint boot (2) from the outer constant velocity joint (1) along the interconnecting shaft (3).

   Discard the outer joint boot.

   Important: All traces of old grease and any contaminates must be removed.

6. Clean the grease from the interconnecting shaft (3) and outer constant velocity joint (1).

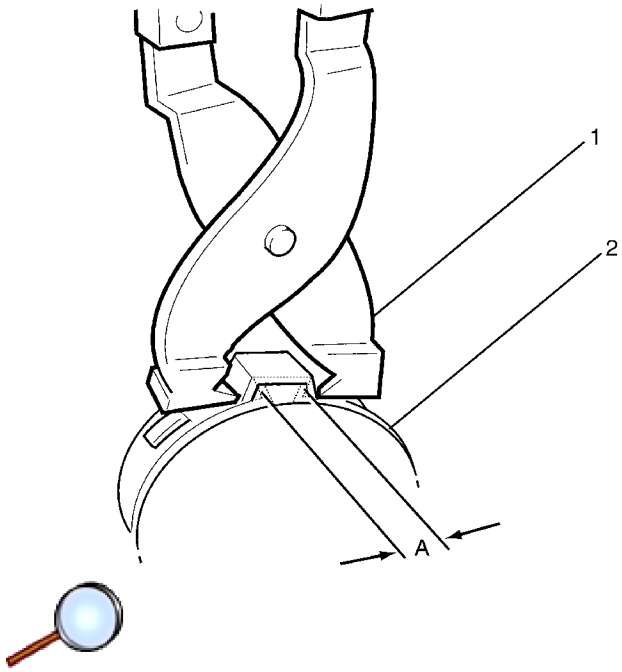
Installation Procedure



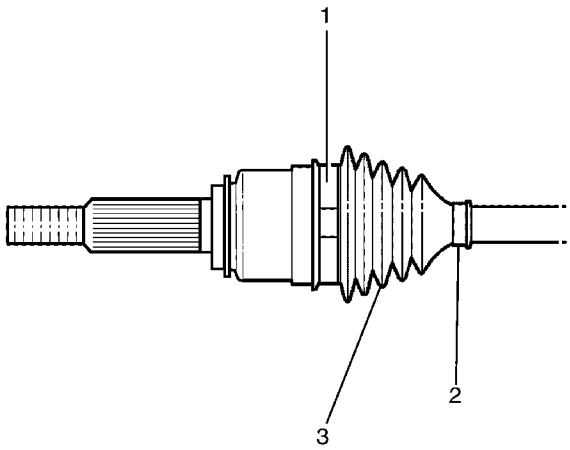
1. Install the NEW outer joint boot (2) along the interconnecting shaft (3).

   Important: Install grease into the outer constant velocity joint (1) and the NEW outer joint boot (2). Refer to Adhesives, Fluids, Lubricants, and Sealers .

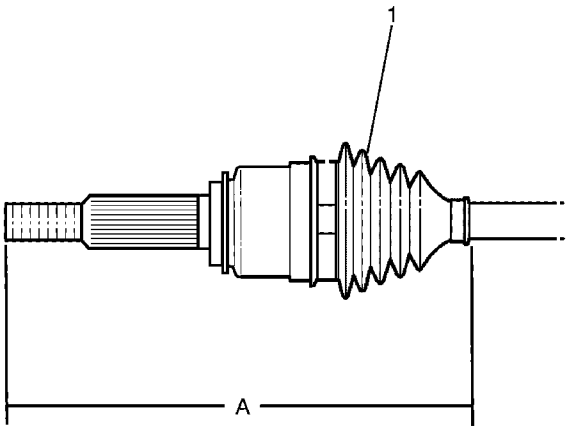
2. Install the NEW outer joint boot (2) to the outer constant velocity joint (1).



3. Use J 22610 (1) to crimp retaining clamp (2). The crimped distance (A) must be between 1.2 - 4mm.



4. Position the NEW outer joint boot large retaining clamp (1) and the NEW outer joint boot small retaining clamp (2) to the NEW outer joint boot (3).
5. Crimp the NEW outer joint boot large retaining clamp (1) and NEW outer joint boot small retaining clamp (2) to the NEW outer joint boot (3).



Important: The NEW outer joint boot (1) must not be dimpled, stretched, or deformed. Always equalise the air pressure in the NEW outer joint boot with the joint in the centre of its plunge position and shape properly by hand.

6. The outer constant velocity joint dimension A is 248 mm (9.8 in) for V6 and 254.3 mm (10 in) for V8.
7. Fully cycle the outer constant velocity joint several times to disperse grease throughout the outer constant velocity joint.
8. Install the inner constant velocity joint and joint boot. Refer to Wheel Drive Shaft Inner Joint and Boot Replacement .
9. Install the wheel drive shaft to the vehicle. Refer to Wheel Drive Shaft Replacement .
10. Remove the safety stands.
11. Lower the vehicle to the ground.